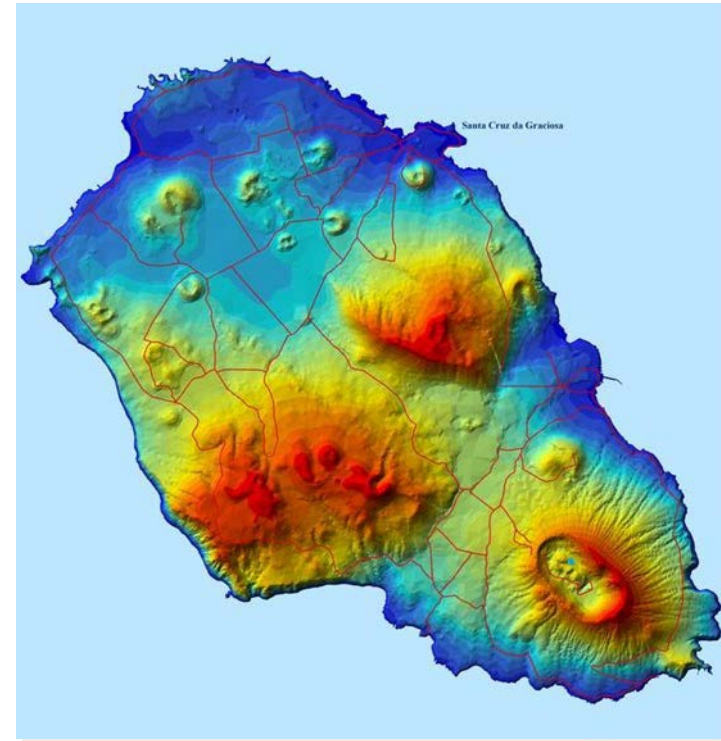


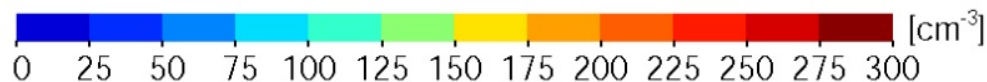
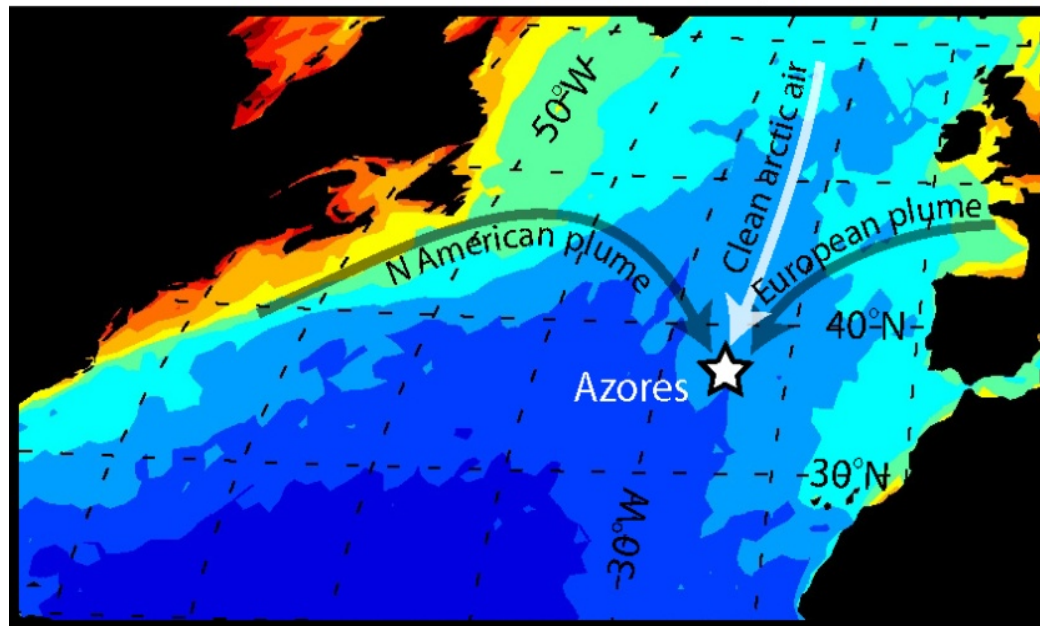
Results from the Azores AMF Deployment and Plans for a New Fixed Site



CAP-MBL : May 2009-Dec 2010

Understanding the diurnal to seasonal variability of the cloud-aerosol-precipitation system at a site dominated by marine low clouds

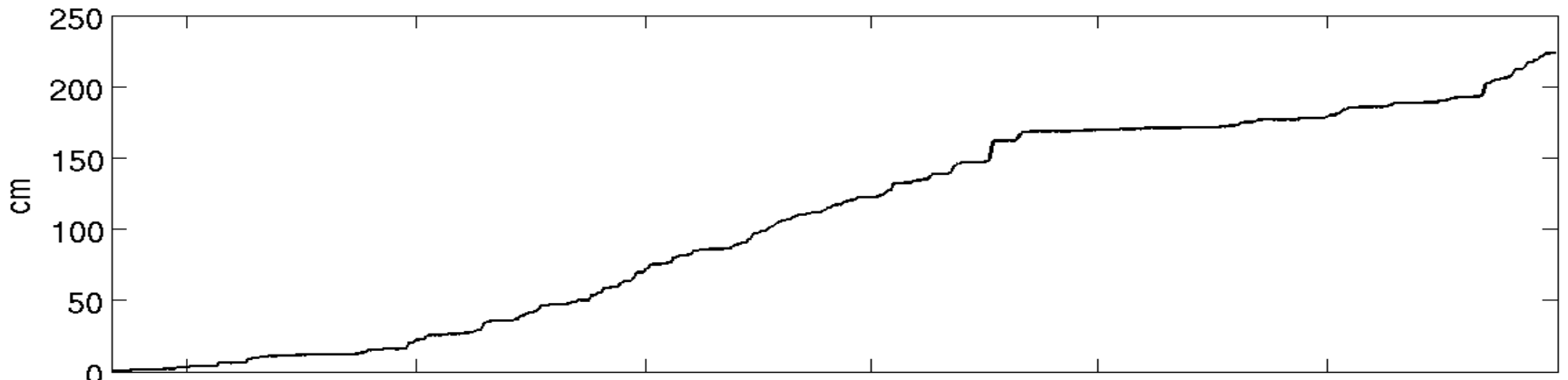
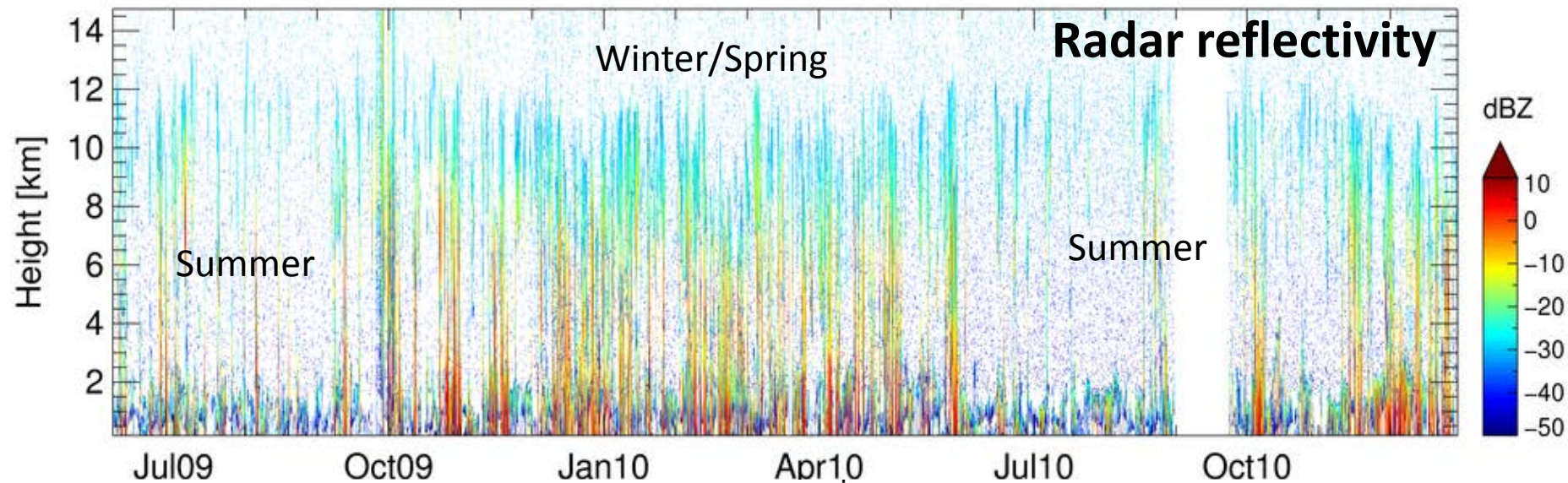
MODIS Annual mean overcast warm cloud droplet concentration



Presentations

- **Dave Mechem:** *Characterizing the joint variability of MBL cloud properties over the northeast Atlantic (with S. E. Yuter, and S. P. de Szoeke)*
- **Kuan-Man Xu:** *Seasonal variations of low clouds simulated by an upgraded multiscale modeling framework model*
- **Ed Luke:** *Progress report on cloud and drizzle retrievals in the Azores*
- **Claudio Mazzoleni:** *Planned aerosol measurements from the Pico elevated site in the Azores*
- **Kim Nitschke:** *Site planning for a fixed ARM site in the Azores*

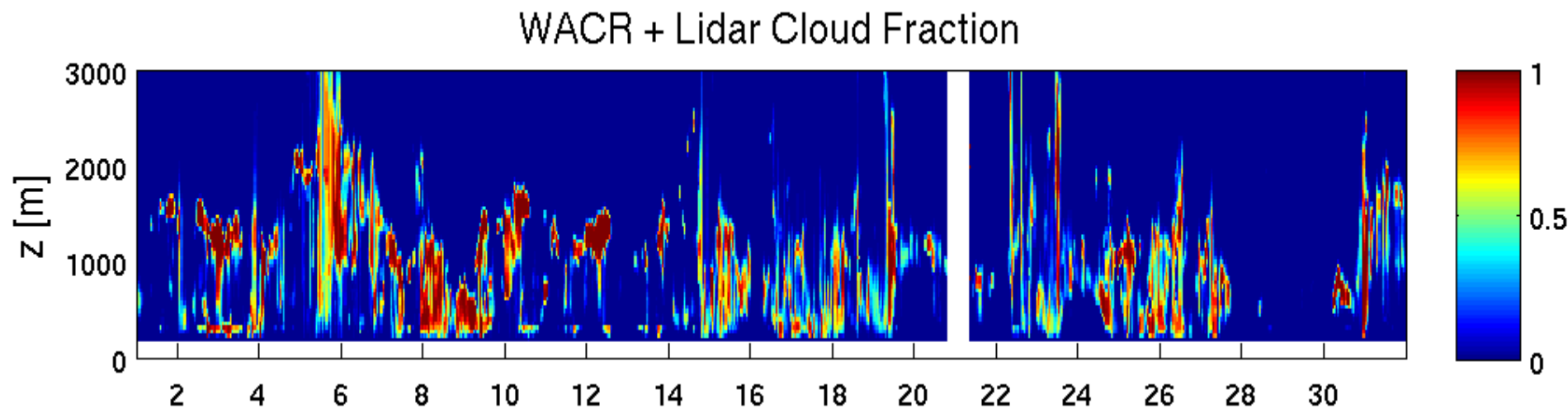
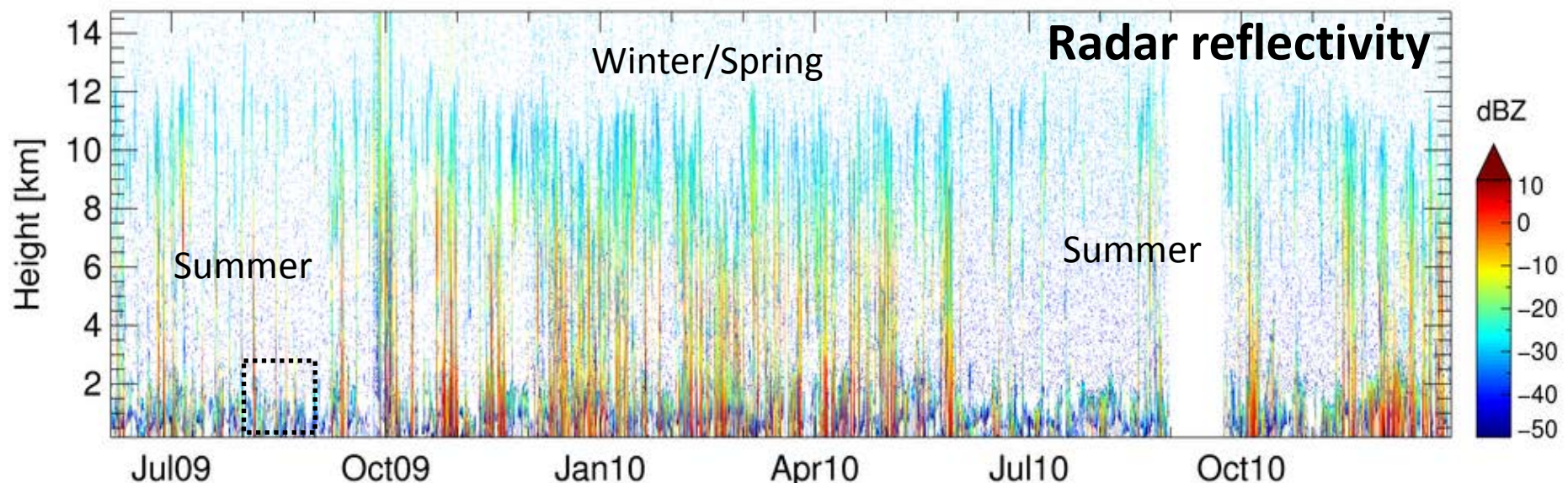
Radar time-height cross section for entire deployment



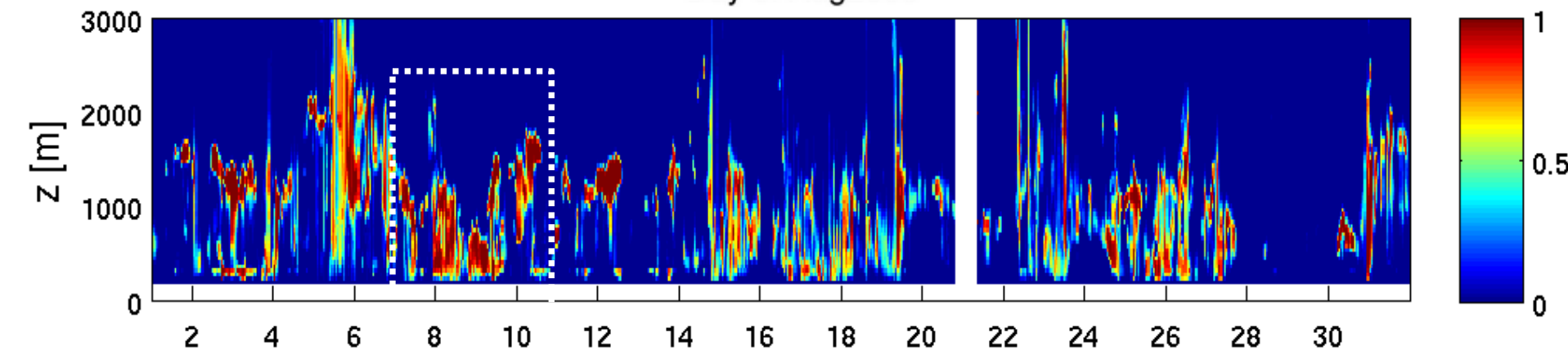
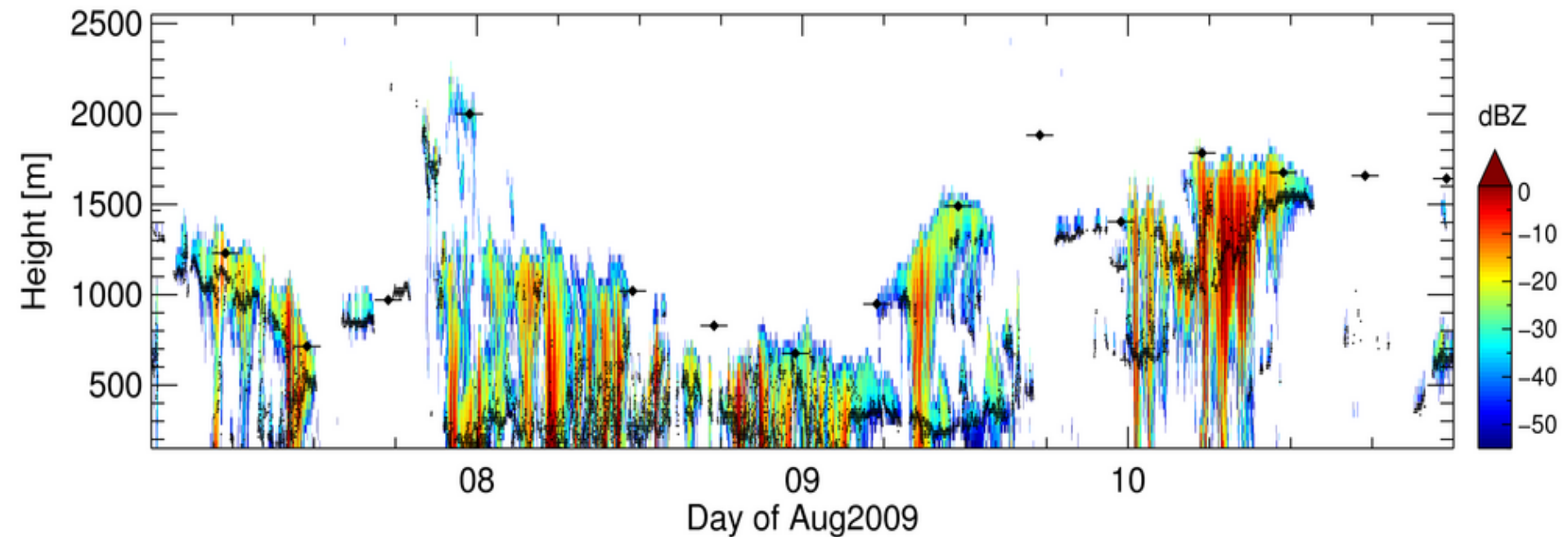
Cumulative precipitation

Jasmine Rémillard, McGill University

Radar time-height cross section for entire deployment



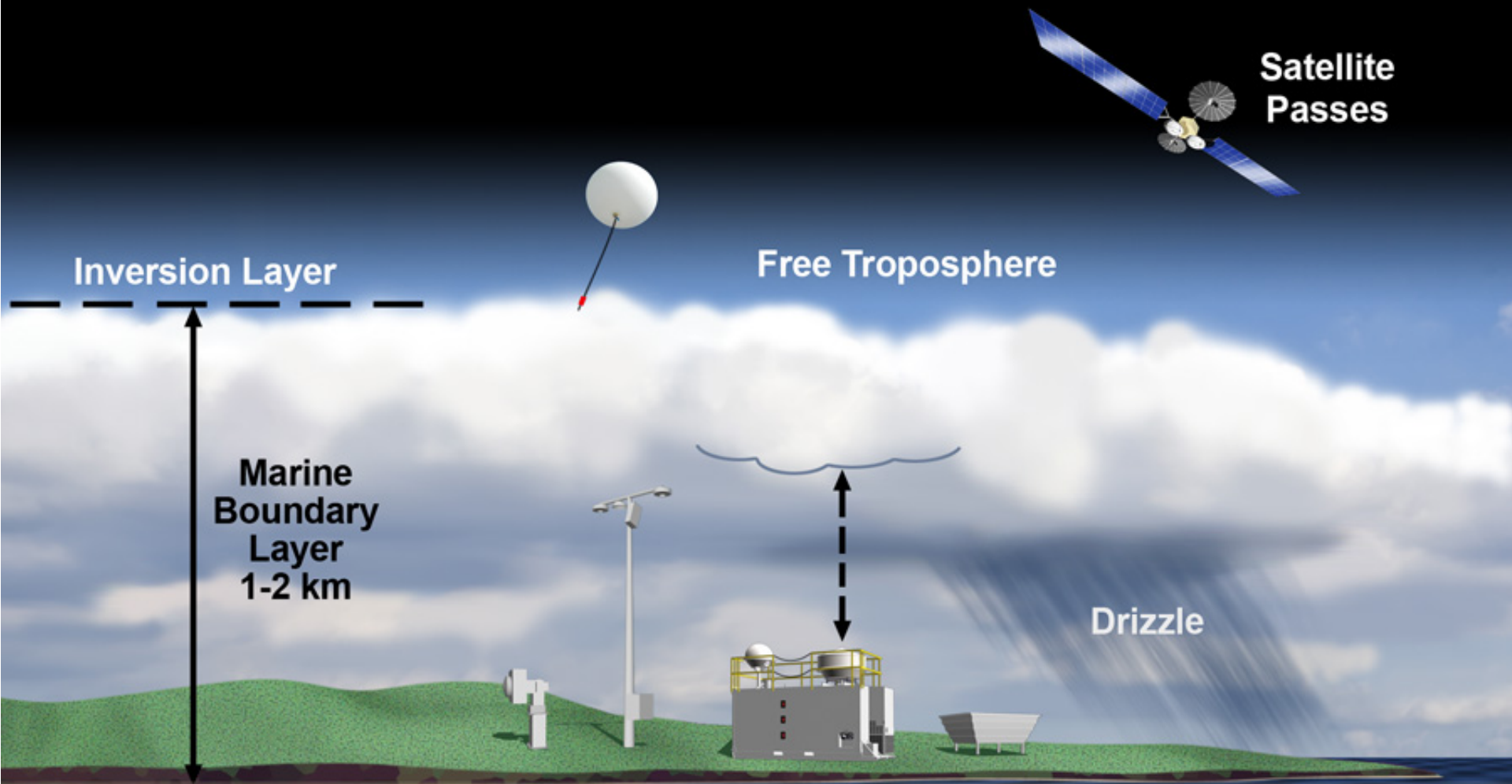
Telescoping in



Outstanding issues not addressed with AMF deployment

- Spatial context of precipitation and clouds
 - Understanding mesoscale structures of low clouds and precipitation is a key problem
- Condensate
 - 50% of low clouds at Graciosa are optically thin
 - Very limited availability of AERI data
 - No direct profiling of cloud liquid water contents
- Cloud dynamics
 - No vertical velocity characterization in presence of precip, or below cloud.
 - No mesoscale structure in horizontal winds
- Aerosol vertical structure
 - Limited understanding from MPL
 - No profiles of aerosol extinction
- Free tropospheric measurements
 - Limited to soundings only
- Marine surface fluxes
 - Surface fluxes on the island not representative of open ocean

AMF configuration for CAP-MBL



Azores breakout synthesis

- First ARM deployment to a marine low cloud environment
 - 20 months sampling revealing tremendous variability in clouds and associated thermodynamic environment, precipitation and aerosols.
 - Initial cloud classification completed
 - New drizzle retrievals
- New investigators
 - Several new teams have started, or are about to commence on analysis
- Model simulations
 - Dedicated forecast model simulations from NCAR and GFDL
- Graciosa chosen for next ARM fixed site
 - Suite of new measurements including precipitation radar, lidars (HSRL and Doppler), scanning Ka band radar, vertically pointing dual wavelength (W/Ka)